



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/779,854	02/09/2001	Francis Geeraert	1076.39608X00	5432
20457	7590	03/30/2004		
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-9889				
			EXAMINER LELE, TANMAY S	
			ART UNIT 2684	PAPER NUMBER 8
DATE MAILED: 03/30/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/779,854

Applicant(s)

GEERAERT ET AL.

Examiner

Tanmay S Lele

Art Unit

2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claim 1 – 18 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

2. Claim 19 objected to because of the following informalities: contains the same limitations as seen in claim 1 (“A balanced antenna for connecting to a balanced power amplifier stage in a portable communications device...”). Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Regarding claims 1, 6, 8, 16, 17, and 18, the phrase "substantially parallel" (or “generally parallel”) renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "substantially parallel"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(b). Note specifically, it was not understood how a plane could be “substantially (or generally) parallel,” as by definition planes extend out infinitely in all directions (and thus a plane is either parallel or not). Appropriate correction is required.

Claims 2 – 15 and 19 are rejected for at least those reasons seen in independent claim 1.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2684

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 –4, 7 –10, 12 – 15, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pierro et al (Pierro, US Patent No. 5,614,863) in view of Matsuyoshi et al. (Matsuyoshi, US Patent No. 6,549,169) in further view of Nghiem (Nghiem, World Intellectual Property Organization, WO 98/44588).

Regarding claim 1, Pierro teaches of a balanced antenna for connecting to a balanced power amplifier stage (Figure 2 and column 2, lines 23 – 28), the balanced power amplifier stage including first and second outputs (Figure 2 and starting column 7, lines 64 and ending column 8, line 9), and each of the antenna elements has a feed point connectable to one of the outputs from the power amplifier stage (Figure 2 and starting column 7, lines 64 and ending column 8, line 9).

Pierro does not specifically teach of in a portable communications device or the antenna comprising a ground plane and first and second antenna elements spaced apart from the ground plane, wherein the first antenna element lies in a first antenna plane and a second antenna element lies in a second antenna plane and the first and second antenna planes are substantially parallel and spaced apart from each other.

In a related art dealing with balanced antennas, Matsuyoshi teaches of a portable communications device (Figures 2 and 3 and column 6, lines 39 – 41) and the antenna comprising a ground plane (column 7, lines 64 – 65) and first and second antenna elements spaced apart from each other and from the ground plane (Figure 3A and starting column 7, line 44 and ending

Art Unit: 2684

column 8, line 2), wherein the antenna elements are arranged to be opposite one another (Figure 5).

It would have been obvious to one skilled in the art at the time of invention to have included into Pierro's balanced amplifier and antenna structure, Matsuyoshi's mobile antenna, for the purposes of accommodating a miniature form factor and mitigating radiation patterns due to human body effects, as taught by Matsuyoshi.

Pierro in view of Matsuyoshi do not specifically teach of wherein the first antenna element lies in a first antenna plane and a second antenna element lies in a second antenna plane and the first and second antenna planes are substantially parallel and spaced apart from each other (though Matsuyoshi does allude to the potential of not being symmetric about the axis, as noted in Figure 1 and column 8, lines 17 –20).

In a related art dealing with mobile antenna structures, Nghiem teaches of wherein the first antenna element lies in a first antenna plane and a second antenna element lies in a second antenna plane and the first and second antenna planes are substantially parallel and spaced apart from each other (Figure 2 and page 6, lines 21 –33, page 8, lines 1 –8).

It would have been obvious to one skilled in the art at the time of invention to have included into Pierro and Matsuyoshi's amplifier antenna structure, Nghiem's different dielectric substrate thickness, for the purposes of increasing the antenna's performance (such as bandwidth and efficiency), as taught by Nghiem.

Regarding claim 2, Pierro in view of Matsuyoshi and Nghiem, teach all the claimed limitations as recited in claim 1. Matsuyoshi further teaches of wherein the antenna elements are substantially identical, each of the antenna elements having an orientation direction, defined

Art Unit: 2684

from the feed point to an end opposite the feed point, and the orientation directions of the first and second antenna elements are reversed with respect to one another (Figures 5 and 7).

Regarding claim 3, Pierro in view of Matsuyoshi and Nghiem, teach all the claimed limitations as recited in claim 1. Matsuyoshi further teaches of wherein the feed points of the antenna elements are arranged at opposite sides of the antenna arrangement (Figure 14 and column 14, lines 24 –36).

Regarding claim 4, Pierro in view of Matsuyoshi and Nghiem, teach all the claimed limitations as recited in claim 1. Matsuyoshi and Nghiem further teach of wherein the first and second antenna elements comprise conductive plates (Matsuyoshi: column 9, lines 34 –38; Nghiem: starting page 4, line 37 and ending page 5, line 2).

Regarding claim 7, Pierro in view of Matsuyoshi and Nghiem, teach all the claimed limitations as recited in claim 1. Matsuyoshi and Nghiem further teach of wherein the space between the antenna elements comprises air (Matsuyoshi: Figure 3A and column 7, lines 43 – 50; Nghiem: page 5, lines 17 –22 and page 6, lines 14 –33).

Regarding claim 8, Pierro in view of Matsuyoshi and Nghiem, teach all the claimed limitations as recited in claim 1. Matsuyoshi and Nghiem further teach of wherein the first and second antenna planes are substantially parallel to the ground plane (Matsuyoshi: Figure 5; Nghiem: Figure 2).

Regarding claim 9, Pierro in view of Matsuyoshi and Nghiem, teach all the claimed limitations as recited in claim 8. Matsuyoshi and Nghiem further teach of wherein the space between the antenna elements comprises a dielectric material (Matsuyoshi: Figure 14 and column 14, lines 7 – 14 and Nghiem: page 5, lines 17 –21 and page 6, lines 14 –33).

Regarding claim 10, Pierro in view of Matsuyoshi and Nghiem, teach all the claimed limitations as recited in claim 9. Matsuyoshi and Nghiem further teach of wherein the dielectric material has a high dielectric constant (Matsuyoshi: starting column 13, line 65 and ending column 14, line 7 and Nghiem: page 5, lines 17 –21 and page 6, lines 14 –33).

Regarding claim 12, Pierro in view of Matsuyoshi and Nghiem, teach all the claimed limitations as recited in claim 1. Matsuyoshi further teaches of further comprising a floating ground between the ground plane and the antenna elements (column 4, lines 16 – 26).

Regarding claim 13, Pierro in view of Matsuyoshi and Nghiem, teach all the claimed limitations as recited in claim 12. Matsuyoshi further teaches of wherein the floating ground comprises a conductive plate which is electrically isolated from the ground plane (column 4, lines 16 – 26).

Regarding claim 14, Pierro in view of Matsuyoshi and Nghiem, teach all the claimed limitations as recited in claim 13. Matsuyoshi and Nghiem further teach of wherein the conductive plate is spaced apart from the ground plane by a dielectric support (Matsuyoshi: column 4, lines 16 – 26 and Nghiem: Figure 2 and page 6, lines 14 –33).

Regarding claim 15, Pierro in view of Matsuyoshi and Nghiem, teach all the claimed limitations as recited in claim 1. Matsuyoshi and Nghiem further teach of a mobile telephone including a balanced antenna (Matsuyoshi: Figures 2 and 3 and column 6, lines 39 – 41 and Figure 3A and starting column 7, line 44 and ending column 8, line 2; Nghiem: page 1, lines 21 – 40).

Regarding claim 19, Pierro in view of Matsuyoshi and Nghiem, teach all the claimed limitations as recited in claim 1. Matsuyoshi and Nghiem further teach of a portable

Art Unit: 2684

communications device including a balanced antenna (Matsuyoshi: Figures 2 and 3 and column 6, lines 39 – 41 and Figure 3A and starting column 7, line 44 and ending column 8, line 2; Nghiem: page 1, lines 21 –40).

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pierro et al (Pierro, US Patent No. 5,614,863) in view of Matsuyoshi et al. (Matsuyoshi, US Patent No. 6,549,169) and Nghiem (Nghiem, World Intellectual Property Organization, WO 98/44588) as applied to claim 1 above, and further in view of Sanford et al. (Sanford, US Patent No. 6,424,300).

Regarding claim 5, Pierro in view of Matsuyoshi and Nghiem, teach all the claimed limitations as recited in claim 1. Pierro in view of Matsuyoshi and Nghiem, do not specifically teach of wherein the portable communications device includes a printed circuit board and the ground plane comprises the printed circuit board (though it should be noted that most mobiles are constructed as such).

In a related art dealing with mobile communications and antenna fabrication, Sanford teaches of wherein the portable communications device includes a printed circuit board (column 3, lines 21 – 27) and the ground plane comprises the printed circuit board (column 3, lines 21 – 27).

It would have been obvious to one skilled in the art at the time of invention to have included into Pierro and Matsuyoshi and Nghiem's communication terminal, Sanford's PCB, for the purposes of housing RF circuitry in order to compact manner, as taught by Sanford.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pierro et al (Pierro, US Patent No. 5,614,863) in view of Matsuyoshi et al. (Matsuyoshi, US Patent No. 6,549,169)



Art Unit: 2684

and Nghiem (Nghiem, World Intellectual Property Organization, WO 98/44588) as applied to claim 1 above, and further in view of Hu et al. (Hu, US Patent No. 6,492,952).

Regarding claim 6, Pierro in view of Matsuyoshi and Nghiem, teach all the claimed limitations as recited in claim 1. Pierro in view of Matsuyoshi do not specifically teach of wherein the antenna elements are substantially perpendicular to the ground plane.

In a related art dealing with mobile communications and antenna orientation, Hu teaches of wherein the antenna elements are substantially perpendicular to the ground plane (starting column 3, line 67 and ending column 4, line 5).

It would have been obvious to one skilled in the art at the time of invention to have included into Pierro and Matsuyoshi and Nghiem's mobile, Hu's antenna positioning, for the purposes of conforming to the form housing while still providing full functionality, as taught by Hu.

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pierro et al (Pierro, US Patent No. 5,614,863) in view of Matsuyoshi et al. (Matsuyoshi, US Patent No. 6,549,169) and Nghiem (Nghiem, World Intellectual Property Organization, WO 98/44588) as applied to claim 1 above, and further in view of Thiel et al. (Thiel, US Patent No. 6,288,682).

Regarding claim 11, Pierro in view of Matsuyoshi and Nghiem, teach all the claimed limitations as recited in claim 10. Pierro in view of Matsuyoshi and Nghiem do not specifically teach of wherein the dielectric constant is greater than about 8 (though Matsuyoshi and Nghiem does teach of antennas arranged on dielectrics in starting column 13, line 65 and ending column 14, line 7 in Matsuyoshi and page 6, lines 14 – 33 in Nghiem).

In a related art dealing with antenna fabrication on dielectrics, Thiel teaches of wherein the dielectric constant is greater than about 8 (starting column 7, line 66 and ending column 8, line 4).

It would have been obvious to one skilled in the art at the time of invention to have included into Pierro and Matsuyoshi and Nghiem's mobile, Thiel's dielectric material, for the purposes of manufacturing a high capacitance value within the physically small volumes present in mobile devices, as taught by Thiel.

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuyoshi et al. (Matsuyoshi, US Patent No. 6,549,169) in view of Sanford et al. (Sanford, US Patent No. 6,424,300) and Nghiem (Nghiem, World Intellectual Property Organization, WO 98/44588).

Regarding claim 16, Matsuyoshi teaches of a portable communications device (Figures 2 and 3 and column 6, lines 39 – 41) comprising a balanced antenna (Figure 3A and starting column 7, line 44 and ending column 8, line 2), the balanced antenna comprising first and second antenna elements mounted to the board, each of the antenna elements having a top edge and a bottom edge, the bottom edge being nearer the board than the top edge (Figure 3A and starting column 7, line 44 and ending column 8, line 2), the device further comprising a ground plane disposed between the bottom edge of the antenna elements and the board, the ground plane being electrically isolated from the antenna elements and the board (column 4, lines 16 – 29).

Matsuyoshi does not specifically teach of a circuit board including a plurality of electronic components mounted thereon or of wherein the first antenna element lies in a first antenna plane and a second antenna element lies in a second antenna plane and the first and second antenna planes are substantially parallel and spaced apart from each other (though

Art Unit: 2684

Matsuyoshi does allude to the potential of not being symmetric about the axis, as noted in Figure 1 and column 8, lines 17 –20).

In a related art dealing with mobile communications and antenna fabrication, Sanford teaches of a circuit board having a plurality of electronic components mounted thereon (column 3, lines 21 – 27).

It would have been obvious to one skilled in the art at the time of invention to have included into Matsuyoshi's communication terminal, Sanford's PCB, for the purposes of housing RF circuitry in order to compact manner, as taught by Sanford.

Matsuyoshi in view of Sanford do not specifically teach of wherein the first antenna element lies in a first antenna plane and a second antenna element lies in a second antenna plane and the first and second antenna planes are substantially parallel and spaced apart from each other (though Matsuyoshi does allude to the potential of not being symmetric about the axis, as noted in Figure 1 and column 8, lines 17 –20).

In a related art dealing with mobile antenna structures, Nghiem teaches of wherein the first antenna element lies in a first antenna plane and a second antenna element lies in a second antenna plane and the first and second antenna planes are substantially parallel and spaced apart from each other (Figure 2 and page 6, lines 21 –33, page 8, lines 1 –8).

It would have been obvious to one skilled in the art at the time of invention to have included into Matsuyoshi and Sanford's antenna structure, Nghiem's different dielectric substrate thickness, for the purposes of increasing the antenna's performance (such as bandwidth and efficiency), as taught by Nghiem.

Art Unit: 2684

11. Claims 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuyoshi et al. (Matsuyoshi, US Patent No. 6,549,169) in view of Nghiem (Nghiem, World Intellectual Property Organization, WO 98/44588).

Regarding claim 17, Matsuyoshi teaches of a balanced antenna for a portable communications device (Figures 2 and 3 and column 6, lines 39 – 41), comprising a ground plane and first and second substantially similar antenna elements spaced apart from each other and from the ground plane (Figure 3A and starting column 7, line 44 and ending column 8, line 2) and aligned in opposite directions with respect to one another (Figure 5).

Matsuyoshi does not specifically teach of wherein the first antenna element lies in a first antenna plane and a second antenna element lies in a second antenna plane and the first and second antenna planes are substantially parallel and spaced apart from each other (though Matsuyoshi does allude to the potential of not being symmetric about the axis, as noted in Figure 1 and column 8, lines 17 –20).

In a related art dealing with mobile antenna structures, Nghiem teaches of wherein the first antenna element lies in a first antenna plane and a second antenna element lies in a second antenna plane and the first and second antenna planes are substantially parallel and spaced apart from each other (Figure 2 and page 6, lines 21 –33, page 8, lines 1 –8).

It would have been obvious to one skilled in the art at the time of invention to have included into Matsuyoshi's antenna structure, Nghiem's different dielectric substrate thickness, for the purposes of increasing the antenna's performance (such as bandwidth and efficiency), as taught by Nghiem.

12. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pierro et al (Pierro, US Patent No. 5,614,863) in view of Matsuyoshi et al. (Matsuyoshi, US Patent No. 6,549,169) and in view of Yanagisawa et al (Yanagisawa, US Patent No. 6,130,651) and Nghiem (Nghiem, World Intellectual Property Organization, WO 98/44588).

Regarding claim 18, Pierro teaches of a balanced antenna for connecting to a balanced power amplifier stage (Figure 2 and column 2, lines 23 – 28), the balanced power amplifier stage including first and second outputs (Figure 2 and starting column 7, lines 64 and ending column 8, line 9), and each of the antenna elements has a feed point connectable to one of the outputs from the power amplifier stage (Figure 2 and starting column 7, lines 64 and ending column 8, line 9).

Pierro does not specifically teach of in a portable communications device or the antenna comprising a ground plane and first and second antenna elements spaced apart from each other and from the ground plane, wherein the antenna elements are arranged to be opposite one another or of to overlap to a predetermined extent, and the method comprising varying the extent to which the antenna elements overlap to tune the antenna for use in a predetermined frequency band or lying in first and second generally parallel planes.

In a related art dealing with balanced antennas, Matsuyoshi teaches of a portable communications device (Figures 2 and 3 and column 6, lines 39 – 41) and the antenna comprising a ground plane (column 7, lines 64 – 65) and first and second antenna elements spaced apart from each other and from the ground plane (Figure 3A and starting column 7, line 44 and ending column 8, line 2), wherein the antenna elements are arranged to be opposite one another (Figure 5).

It would have been obvious to one skilled in the art at the time of invention to have included into Pierro's balanced amplifier and antenna structure, Matsuyoshi's mobile antenna, for the purposes of accommodating a miniature form factor and mitigating radiation patterns due to human body effects, as taught by Matsuyoshi.

Pierro in view of Matsuyoshi do not specifically teach of to overlap to a predetermined extent, and the method comprising varying the extent to which the antenna elements overlap to tune the antenna for use in a predetermined frequency band or lying in first and second generally parallel planes.

In related art dealing with antennas and tuning, Yanagisawa teaches of overlap to a predetermined extent, and the method comprising varying the extent to which the antenna elements overlap to tune the antenna for use in a predetermined frequency band (column 3, lines 12 – 25).

It would have been obvious to one skilled in the art at the time of invention to have included into Pierro and Matsuyoshi's mobile, Yanagisawa's overlap, for the purposes of tuning the mobile the desired band of interest while conforming to the size of the housing, as taught by Yanagisawa.

Pierro in view of Matsuyoshi and Yanagisawa do not specifically teach of lying in first and second generally parallel planes.

In a related art dealing with mobile antenna structures, Nghiem teaches of lying in first and second generally parallel planes (Figure 2 and page 6, lines 21 –33, page 8, lines 1 –8).

It would have been obvious to one skilled in the art at the time of invention to have included into Pierro in view of Matsuyoshi and Yanagisawa's antenna structure, Nghiem's

Art Unit: 2684

different dielectric substrate thickness, for the purposes of increasing the antenna's performance (such as bandwidth and efficiency), as taught by Nghiem.

***Citation of Pertinent Prior Art***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Inventor	Publication	Number	Disclosure
Weinberger	US Patent	6,483,462	Antenna for radio-operated communication terminal equipment
Smith et al.	US Patent	6,426,723	Antenna arrangement for multiple input multiple output communications systems
Sadler et al.	US Patent	6,417,816	Dual band bowtie/meander antenna
Isohatała et al.	US Patent	6,252,554	Antenna Structure
Tsunekawa et al.	US Patent	5,917,450	Antenna devices having double-resonance characteristic
Chen et al.	US Patent	5,644,319	Multi-resonance horizontal-U shaped antenna
Rasinger et al.	US Patent	5,365,246	Transmitting and/or receiving arrangement for portable appliances

***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period


Art Unit: 2684

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tanmay S Lele whose telephone number is (703) 305-3462. The examiner can normally be reached on 9 - 6:30 PM Monday – Thursdays and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A. Maung can be reached on (703) 308-7745. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

  
Tanmay S Lele  
Examiner  
Art Unit 2684

tsl  
March 8, 2004

  
NAY MAUNG  
SUPERVISORY PATENT EXAMINER